Tennessee Pollution Prevention Partnership Success Story

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Lighting Projects Conserve Energy and Save Cost

The Member

Baldor Electric Company designs, markets, manufactures and sells industrial electric motors, electronic drives, power transmission products and generators. Baldor has 8300 employees in 28 plants, located in 5 countries, supplying over 9500 customers in over 160 industries. Baldor takes pride in producing a high quality product and taking care of customers. The Dodge Bearing Plant, part of Baldor, is a 221,000 square-foot facility located in Rogersville, TN that manufactures mounted ball bearings for industries such as food and beverage, petroleum, chemical, mining, air handling, forest products, and baggage handling.

The Story

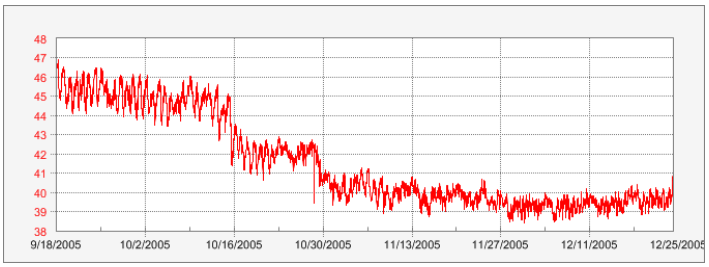
Facing impending electrical energy cost increases in 2005, the Dodge Plant realized the necessity of identifying projects that would reduce energy consumption and save cost for the company. An engineering study was conducted in March 2005 to find viable conservation opportunities. All equipment and processes using electrical energy were listed in a comprehensive report along with electrical consumption information. Two lighting projects were selected as projects to undertake, one in the office area and the other in manufacturing. A process of metering and monitoring was adopted to achieve reduction goals.

Metering

Dodge wanted to have a method of capturing accurate electrical consumption data, so metering was installed in lighting sub-panels to measure the amount of energy used.

Monitoring

In addition to metering, Dodge installed web-based software that collects energy consumption data and stores it in a database. This allows baseline and post-project data to be measured to validate consumption savings projections. The chart below shows kilowatt demand for one segment of manufacturing lights prior to project start (Sep 2005) and after project completion (Dec 2005). The downward slope shows the true reduction in energy consumption. Data from March 2008 verifies the same consumption savings is still in place.



Manufacturing Lights KW Demand

The Success

Dodge retrofitted 489 office light fixtures containing magnetic ballasts and 40-watt (T12) fluorescent tubes with new electronic ballasts and 28-watt fluorescent tubes. A 32% reduction in consumption was achieved, conserving 390,000 kwh annually and $23,360. In the manufacturing area, 670 400-watt bulbs were replaced with 360-watt energy efficient bulbs that maintained the same lighting level for operators. A 13% reduction in consumption was achieved, conserving over 600,000 kwh annually and $36,000. The Dodge Plant was able to reduce electrical energy consumption at a time when rates were increasing.

The Pollution Prevented

Electrical energy consumption reductions for both lighting projects totaled just under 1,000,000 kilowatt-hours annually with a total annual cost savings of $53,360. Replaced bulbs were donated to local churches and others were reused by employees.

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